

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### In the Claims

The claims have been amended as follows:

1           1. (Twice Amended) In the manufacture of a magnetic recording medium, a method of  
2     varying coercivity comprising the steps of:

3           a)     providing a substrate for supporting magnetic layers;

4           b)     sputtering on the substrate an underlayer having a lattice structure for matching  
5     with a magnetic layer lattice structure;

6           c)     sputtering a first magnetic layer on the underlayer, the first magnetic layer having  
7     a first alloy composition and a first coercivity; ~~and~~

8           d)     sputtering a second magnetic layer on and in contact with the first magnetic layer,  
9     the second magnetic layer having a second alloy composition which differs from the first alloy  
10    composition and a second coercivity which differs from the first coercivity, whereby a coercivity  
11    of the two magnetic layers is **different than** ~~between~~ the first and second coercivities and is  
12    determined by the relative thicknesses of the two magnetic layers; **and**

13          e)     **sputtering a third magnetic layer on the second magnetic layer.**

1           8. (Amended) The method as defined by claim 3 wherein step b) **includes providing**  
2    ~~comprises sputtering an underlying layer that is including~~ chromium or a chrome alloy.

1           10. (Amended) The method as defined by claim 1 **wherein step a) includes providing**  
2    **a substrate that is nickel phosphorus or ceramic glass, and step b) includes providing an**  
3    **underlayer that is chromium or a chrome alloy** ~~and further including the step e) of sputtering~~  
4    ~~a third magnetic layer on the second magnetic layer.~~

1           11. (Twice Amended) A magnetic recording medium, comprising:  
2    a substrate;

3 an underlayer supported by the substrate;  
4 a first magnetic layer on the underlayer, said first magnetic layer having first alloy  
5 composition **that includes Pt** and a first coercivity; and  
6 a second magnetic layer on and in contact with the first magnetic layer, the second  
7 magnetic layer having a second alloy composition **that includes Pt** which differs from the first  
8 alloy composition and a second coercivity which differs from the first coercivity, whereby a  
9 coercivity of the two magnetic layers is **different than** ~~between~~ the first and second coercivities  
10 and is determined by a relative thickness of the first magnetic layer to the thickness of the two  
11 magnetic layers.

1 20. (Twice Amended) A method for establishing a coercivity of magnetic recording  
2 material on a substrate comprising the steps of providing a substrate and at least two cobalt based  
3 alloy magnetic layers sputtered in sequence on the substrate and in contact with one another,  
4 wherein the first magnetic layer has a first **quaternary alloy** composition and a first coercivity,  
5 the second magnetic layer has a second **quaternary alloy** composition and a second coercivity,  
6 with the relative thicknesses of the two magnetic layers determining the coercivity, and the  
7 coercivity being **different than** ~~between~~ the first and second coercivities.

1 21. (Amended) A magnetic recording medium, comprising:  
2 a substrate;  
3 a first magnetic layer over the substrate, wherein the first magnetic layer has a first alloy  
4 composition **and**, a first coercivity ~~and a first remanence~~; and  
5 a second magnetic layer on and in contact with the first magnetic layer, wherein the  
6 second magnetic layer has a second alloy composition **and**, a second coercivity ~~and a second~~  
7 ~~remanence~~, the first and second alloy compositions are different, the first and second coercivities  
8 are different, ~~the first and second remanences are the same, and~~ a coercivity of the medium is  
9 **different than** ~~between~~ the first and second coercivities, **and varying a thickness fraction of**  
10 **the thickness of the first magnetic layer to the thickness of the first and second magnetic**

11 layers has a significant effect on the coercivity of the medium with little or no effect on the  
12 remanence of the medium.

1 31. (Amended) A magnetic recording medium, comprising:  
2 a substrate;  
3 a first magnetic layer over the substrate, wherein the first magnetic layer has a first alloy  
4 composition **and**; a first coercivity ~~and a first remanence~~ and is sputter deposited over the  
5 substrate under a first deposition condition that includes a temperature and bias of the substrate;  
6 and  
7 a second magnetic layer on and in contact with the first magnetic layer, wherein the  
8 second magnetic layer has a second alloy composition **and**; a second coercivity ~~and a second~~  
9 ~~remanence~~ and is sputter deposited on the first magnetic layer under a second deposition  
10 condition that includes a temperature and bias of the substrate, the first and second alloy  
11 compositions are different **compositions that contain Co and Pt**, the first and second  
12 coercivities are different, the first and second deposition conditions are the same, and a coercivity  
13 of the medium is **different than** ~~between~~ the first and second coercivities.

1 39. (Amended) The magnetic recording medium as defined by claim 31 wherein  
2 **varying a thickness fraction of the thickness of the first magnetic layer to the thickness of**  
3 **the first and second magnetic layers has a significant effect on the coercivity of the medium**  
4 **with little or no effect on the remanence of the medium** ~~the first and second remanences are~~  
5 ~~the same.~~

1 41. (Amended) A magnetic recording medium, comprising:  
2 a substrate;  
3 a first magnetic layer over the substrate, wherein the first magnetic layer has a first alloy  
4 composition **and**; a first coercivity ~~and a first remanence~~; and  
5 a second magnetic layer on and in contact with the first magnetic layer, wherein the  
6 second magnetic layer has a second alloy composition **and**; a second coercivity ~~and a second~~

7 ~~remanence~~, the first and second alloy compositions are different quaternary alloy compositions,  
8 the first and second coercivities are different, and a coercivity of the medium is **different than**  
9 ~~between~~ the first and second coercivities.

## **REMARKS**

Claims 1-50 are pending. In this Response, claims 1, 8, 10, 11, 20, 21, 31, 39 and 40 have been amended.

### **I. SPECIFICATION**

The Substitute Specification has not been entered because there is no statement on the record that the Substitute Specification includes no new matter.

The Response that accompanied the Substitute Specification states "The Specification and Claims have been amended to improve clarity. No new matter has been added." Thus, the record reflects that the Substitute Specification includes no new matter.

Applicant reiterates that the Substitute Specification includes no new matter and requests that it be entered.

### **II. SECTION 112, FIRST PARAGRAPH REJECTIONS**

Claims 1-50 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors at the time the application was filed had possession of the claimed invention. The two basis for rejection are discussed in separate paragraphs below.

Claims 1, 11, 20, 21, 31 and 41 are rejected since there is no indication in the original disclosure that the coercivity of the medium is between the coercivities of the individual magnetic layers. Accordingly, claims 1, 11, 20, 21, 31 and 41 have been amended to recite that the coercivity of the magnetic layers (or medium or recording material) is "different than" the first and second coercivities.

Claims 21 and 39 are rejected since there is no support for the limitation that the "first and second remanences are the same." Accordingly, claims 21 and 39 have been amended to delete this phrase and recite "varying a thickness fraction of the thickness of the first magnetic

layer to the thickness of the first and second magnetic layers has a significant effect on the coercivity of the medium with little or no effect on the remanence of the medium.” The original Specification provides support at page 3, lines 20-24 and page 4, lines 10-12.

Therefore, Applicant requests that these rejections be withdrawn.

### III. SECTION 102 REJECTIONS – ZHANG

Claims 1-3, 8-9, 11-13, 18 and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by *Zhang* (U.S. Patent No. 5,772,857).

*Zhang* discloses a double layer media with a CoCrTa layer and a CoCrTaPt layer.

Claim 1 has been amended to recite “sputtering a third magnetic layer on the second magnetic layer.” *Zhang* fails to teach or suggest this approach, as the Examiner apparently recognizes by withholding an art rejection against claim 10.

Claim 9 has been amended to recite that the first magnetic layer has a first alloy composition “that includes Pt” and the second magnetic layer has a second alloy composition “that includes Pt.” *Zhang* fails to teach or suggest that the CoCrTa layer includes Pt.

Claim 20 has been amended to recite that the first magnetic layer has a first “quaternary alloy” composition and the second magnetic layer has a second “quaternary alloy” composition. *Zhang* fails to teach or suggest that the CoCrTa layer is a quaternary alloy, as the Examiner apparently recognizes by withholding an art rejection against claims 22, 32 or 41.

Under 35 U.S.C. §102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art. *Akzo N.V. v. United States International Trade Commission*, 1 USPQ 2d 1241, 1245 (Fed. Cir. 1986), *cert. denied*, 482 U.S. 909 (1987). That is, the reference must teach every aspect of the claimed invention. M.P.E.P. § 706.02.

Therefore, Applicant requests that these rejections be withdrawn.

#### IV. SECTION 103 REJECTIONS – ZHANG

Claim 31 and 40 are rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over *Zhang* (U.S. Patent No. 5,772,857).

Claim 31 has been amended to recite that the first and second alloy compositions are different compositions “that contain Co and Pt.” *Zhang* fails to teach or suggest that the CoCrTa layer includes Pt.

#### V. SECTION 103 REJECTION – ZHANG AND ZHANG

Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Zhang* (U.S. Patent No. 5,772,857) in view of *Zhang* (U.S. Patent No. 5,858,566).

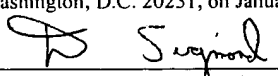
Applicant submits that this rejection is moot for the reasons mentioned above.

#### VI. OTHER AMENDMENTS

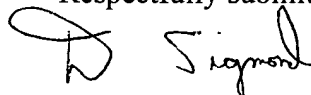
The Claims have been amended to improve clarity. No new matter has been added.

#### VII. CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on January 15, 2003.	
	1/15/03
David M. Sigmond Attorney for Applicant	Date of Signature

Respectfully submitted,



David M. Sigmond  
Attorney for Applicant  
Reg. No. 34,013  
(303) 702-4132  
(303) 678-3111 (fax)